



Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-4. (Cancelled)

5. (Currently Amended) A semiconductor laser module, comprising:

(a) an optical assembly including,

a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto,

a temperature sensor for sensing [[the]] said temperature of said laser diode,

a heater for simulating a self-heating of said laser diode by providing a supply current,

and

a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said semiconductor laser diode, said temperature sensor and said heater thereon; and

(b) a controller including,

a memory means for preserving a predetermined temperature range in a digital form,

a digital to analog converter for converting said predetermined temperature range preserved in said memory means to values in an analog form and for outputting, to said window comparator, said values converted from said digital form,

a window comparator for comparing said temperature of said laser diode sensed by said temperature sensor ~~and a predetermined range~~ with said values, said window comparator

outputting a switching signal when said temperature of said laser diode falls within said predetermined range, and

a first switch connected to said heater, said first switch having a normally close configuration and turning off by receiving said switching signal from said window comparator, thereby shutting off said supply current to said heater.

6. (Previously Presented) The semiconductor laser module according to claim 5, wherein said driving signal includes a bias current and a modulation current, and said semiconductor laser module further comprises a second switch and a third switch, said second switch turning on and supplying said bias current to said laser diode by receiving said switching signal, and said third switch turning on and supplying said modulation current to said laser diode by receiving said switching signal.

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) The semiconductor laser module according to claim 5 [[7]], further comprising a driver for driving said thermoelectric cooler and a differential amplifier,

wherein said differential amplifier compares said temperature of said laser diode sensed by said temperature sensor and a predetermined temperature, and outputs a signal for driving said thermoelectric cooler, ~~so that a feedback control for stabilizing~~ so as to stabilize said

temperature of said laser diode at said predetermined temperature ~~is achieved~~.

10. (Cancelled)

11. (Currently Amended) A method for thermally stabilizing an optical assembly including a semiconductor laser diode, a temperature sensor, a heater and a thermoelectric cooler, said laser diode [[for]] emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto, [[a]] said temperature sensor [[for]] sensing said temperature of said laser diode, ~~a heater and a said~~ thermoelectric cooler [[for]] controlling said temperature of said laser diode and mounting said laser diode, said temperature sensor and said heater thereon, said method comprising the steps of:

converting, by a digital to analog converter, a temperature range preserved in a memory means in a digital form into value in an analog form;

[[a)] providing a supply current to said heater for simulating a self-heating of said laser diode;

comparing, by a window comparator, said temperature of said laser diode with said values converted by said digital to analog converter;

outputting, by said window comparator, a switching signal to a switch when said temperature of said laser diode falls within said temperature range;

[[b)] shutting off said supply current by turning off said switch with said switching signal ~~after said temperature of said laser diode falls within a predetermined range;~~ and

[[c)] providing said driving signal to said laser diode.

12. (Cancelled)

13. (Previously Presented) An optical assembly, comprising:

a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto;

a temperature sensor for sensing said temperature of said laser diode;

a heater for simulating a self-heating of said laser diode by providing a supply current before said driving signal is provided to said laser diode;

a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said laser diode, said temperature sensor and said heater thereon;

an inductor connected in serial to said heater; and

first to third terminals, said first and second terminals arranging said laser diode therebetween and said first and third terminals arranging said serially connected heater and inductor therebetween,

wherein said driving signal is provided to said second terminal, and said supply current is provided from said third terminal.